

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Bijendra N. Jain, Keith McCloghrie
Assignee: Cisco Technology, Inc.
Title: Method And Apparatus For Uninterrupted Packet Transfer Using
Replication Over Disjoint Paths
Serial No.: 10/820,257 Filing Date: April 8, 2004
Examiner: Dieu Minh T. Le Group Art Unit: 2114
Docket No.: CIS0094C1US Confirmation No: 7510

Austin, Texas
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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

Applicants hereby request review of the final rejection, mailed May 29, 2007, in the above-identified application. This Request is being filed concurrently with a Notice of Appeal. An amendment under 37 C.F.R §41.33(b)(1) canceling claims 29-35, 49-54, 67-73, and 84-90 is being filed with this request.

This review is requested for the reasons set forth in the Remarks section below.

REMARKS

Claims 14-28, 36-48, 55-66, and 74-83 are pending in the application.

Claims 14-90 stand rejected.

Claims 29-35, 49-54, 67-73, and 84-90 are cancelled in the amendment under 37 C.F.R. § 41.33(b)(1) that accompanies this request.

Rejection of Claims Under 35 U.S.C. §103

Claims 14-90 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ariel Orda and Raphael Rom's article "Routing with Packet Duplication and Elimination in Computer Networks," IEEE Transactions on Communications, Volume 36, No. 7, July 1988 (hereinafter referred to as "Orda"), in view of U.S. Patent 6,760,328 issued to Ofek et al. (hereinafter referred to as "Ofek"). Applicants respectfully traverse this rejection. The Non-final Office Action, mailed January 5, 2007, is hereinafter referred to as "NFOA" and the Final Office Action, mailed May 29, 2007, is hereinafter referred to as "FOA".

Claim 14 recites:

identifying a first network component in a first path using a first identifier stored in a data structure, wherein
 the first path is between a first node and a second node;
 removing the first identifier from the data structure; and
 identifying a second network component in a second path using a second identifier stored in the data structure, wherein
 the second identifier remains in the data structure subsequent to the removing the first identifier,
 the second path is between the first node and the second node, and
 the first path and the second path are disjoint.

The cited art does not teach or suggest the "data structure" described in claim 14. In the Non-final Office Action, the Examiner relies on Orda to teach this feature. The NFOA states:

Therefore it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to first realizing Orda et al.'s **distributed algorithm including optimal, deadlock free, loop free, packet duplication, network reliability, packet loss control, routing control, congestion control, packet switching, telecommunication traffic, etc... via multiple node, paths, and data packets including sources and destination addresses** (i.e., **data structure**) as being the first and second identifier stored in a data structure as claimed by Applicant. (NFOA p. 7, emphasis in original).

On the other hand, in the Final Office Action, the Examiner relies on Ofek to teach this feature. The Examiner equates Ofek's "data packet structure header," which is simply a packet header, with the data structure of claim 14. (FOA, p. 4). The Final Office Action states:

Data is/are structured including data header, source/destination addresses), payload, ECC (checksum, etc...), the data source and destination addresses can easily be removed and added for routing purpose. Ofek explicitly demonstrated **data packet structure** including header, timestamp, priority bit, etc... based on path identifiers used in supporting data communication transmission via Internet MPLS (multi protocol label swapping or tag switching) labels, ATM virtual circuit identifier and virtual path identifier (VCI/VPI), and IEEE 802 MAC (media access control) addresses, for mapping from an input port to an output port [fig. 6A, col. 8, lines 48 through col. 9, line 11 and col. 14, lines 13-31]. (FOA p. 6-7)(emphasis in original)

Ofek describes a method for transmitting data packets with varying link speeds over a packet switching network. Ofek's network switches maintain a common time reference and periodically forward data packets along a route from a source to a destination. (Ofek, Abstract). Unlike the data structure of claim 14, Ofek's data packet cannot be used to identify nodes in the manner recited in claim 14. Thus, Ofek's data packets are clearly not analogous to the data structure of claim 14.

However, even if Ofek's data packets were analogous to the data structure of claim 14, a point Applicants do not concede, Ofek fails to teach removing anything from the data packets, let alone removing a first identifier from the data packets. Thus, the cited portion of Ofek does not teach or suggest removing a first identifier from a data structure as recited in claim 14.

The cited art does not teach or suggest the removal of the first identifier from the data structure as described in claim 14. In the Non-final Office Action, the Examiner relies on **Orda** to teach this feature. (NFOA, p. 6). The Non-final Office Action relies upon pages 682 (Applicants assume that this is meant to be a citation to page 862, since Orda does not contain a page 682) and 866 of Orda to teach this feature of claim 14 (no portions of Ofek are relied upon to teach this feature). The cited pages of Orda describe the ways in which data packets can be eliminated as those data packets are being conveyed through a network. The cited pages of Orda clearly do not contain any teaching or suggestion to remove an identifier from a data structure. Applicants note that eliminating a data packet as that packet is being conveyed through a network is clearly not the same as removing an identifier from a data structure. Thus, the cited art clearly fails to teach or suggest this feature of claim 14.

The Final Office Action states that “removing the first identifier from the data structure limitation is notoriously well known in the network routing arena...” (FOA, p. 7). The Final Office Action also states that “data source and destination addresses can easily removed and added for routing purpose...” (FOA, p. 7). Applicants respectfully note that merely modifying a packet header for routing purposes neither teaches nor suggests removing a first identifier and leaving a second identifier in the data structure, where the first identifier and the second identifier are both usable to identify respective disjoint paths between the same two nodes. Thus, merely stating that addresses can be removed from a packet header does not teach or suggest the specific acts or identifiers recited in claim 14.

Additionally, claim 14 describes removing the first identifier from the data structure and leaving the second identifier in the data structure, and that the first identifier and the second identifier are both usable to identify respective disjoint paths between the same two nodes. The Final Office Action does not explain whether removing the first identifier from the data structure is analogous to the act of removing the data source address, the act of removing the data destination address, or the act of removing both addresses from the data header for routing purposes. Thus, Applicants are unable to discern how removing a data source address and/ or a data destination address from a packet header allows the information remaining in the packet header be usable to identify a respective disjoint path between the same two nodes. Applicants note that updating the packet header during routing is clearly not the same as removing an identifier from a data structure in the manner recited in claim 14.

Also, in claim 14 the first identifier is removed from the data structure, and the second identifier remains in the data structure subsequent to the removal of the first identifier. The cited art clearly fails to teach or suggest this feature of claim 14.

Finally, Applicants note that the Non-final Office Action equates a data packet with the data structure of claim 14 (NFOA, p. 7), while also equating the act of eliminating data packets with claim 14’s act of removing an identifier from a data structure. (NFOA, p. 6). Since data packets are equated with the data structure, eliminating a data packet would be equivalent to eliminating the entire data structure. Eliminating the entire data structure is clearly not the same as simply removing an identifier from the data structure. Furthermore, the act of eliminating an entire data

structure would make it impossible for “the second identifier [to remain] in a data structure subsequent to the removing the first identifier,” as recited in claim 14 (emphasis added). Accordingly, the rejection clearly does not show how the cited art teaches or suggests the features of claim 14. Thus, neither Ofek nor Orda, considered alone or in combination, teaches or suggests the method of claim 14.

For at least the foregoing reasons, claim 14 is patentable over the cited art, as are dependent claims 15-28. Claims 36-48, 55-66, and 74-83 are patentable over the cited art for similar reasons.

CONCLUSION

Applicants submit that all claims are now in condition for allowance, and an early notice to that effect is earnestly solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is requested to telephone the undersigned.

If any extensions of time under 37 C.F.R. § 1.136(a) are required in order for this submission to be considered timely, Applicant hereby petitions for such extensions. Applicant also hereby authorizes that any fees due for such extensions or any other fee associated with this submission, as specified in 37 C.F.R. § 1.16 or § 1.17, be charged to Deposit Account 502306.

Respectfully submitted,



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